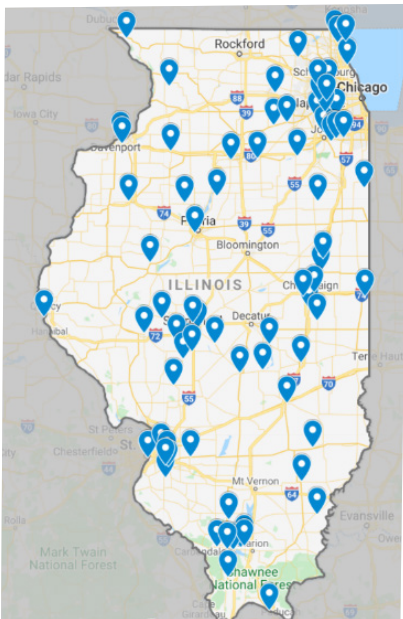


# Public Water Infrastructure Plant Efficiency Program

Since 2018, the [Illinois Environmental Protection Agency's \(EPA\) Office of Energy](#) has teamed up with the [Smart Energy Design Assistance Center](#) (SEDAC) and the [Illinois Sustainable Technology Center](#) (ISTC) to help municipalities reduce energy and costs for water and wastewater treatment. Funded by the Illinois EPA, no-cost energy efficiency opportunity usage assessments are provided to publicly owned water and wastewater treatment facilities by SEDAC and ISTC. Similar assessments would cost between \$6,000 and \$12,000.

The cost of wastewater treatment can be a significant burden for municipalities, especially when the infrastructure is aged or inappropriately sized for the community it serves. This partnership helps municipalities identify ways to improve their systems and realize cost savings for their communities.



Assessed facilities map

Since the program began, total recommendations made by ISTC and SEDAC, if fully implemented, represent a savings of 39.7 million kWh, a reduction of greenhouse gas emissions at 32,590 metric tons of CO<sub>2</sub> equivalent, and \$3,000,000 in total cost savings.

## ASSESSMENT PROCESS

An energy assessment provided by SEDAC or ISTC includes a facility walk through, utility bill analysis, and an assessment report with:

- ▶ Energy efficiency recommendations
- ▶ Projected energy and cost savings and incentives
- ▶ Projected capital cost and payback time
- ▶ Information on incentive opportunities to reduce cost

Assessment reports also include a summary of current equipment and operations with details of current energy usage. In addition, the project team follows up to review opportunities, costs for equipment upgrades or retrofits, estimated ROI, and projected yearly savings.

The team helps participants identify financial resources for project funding. Utility incentives from companies such as Ameren and ComEd often offset the costs for new, more efficient equipment by as much as 75 percent!

## PARTICIPATION REQUIREMENTS

To qualify for an assessment, a public water or wastewater system must:

- ▶ Be located in Illinois and owned by the State of Illinois or local government
- ▶ Allow SEDAC and/or ISTC access to the treatment facility
- ▶ Be willing to share facility information, including utility data, with SEDAC and Illinois EPA
- ▶ Share the final assessment report with the Illinois EPA



## ENERGY SAVINGS POTENTIAL OF TYPICAL WASTEWATER TREATMENT FACILITIES



VILLAGE OF SWANSEA FACILITY

Type of Facility	Activated Sludge
Potential kWh savings/yr	750,000
Potential cost savings/yr	\$65,000
Potential incentives identified	\$253,000
Simple payback (in years) with incentives	1.8

### MAIN RECOMMENDATIONS

- ▶ variable frequency drives on blowers and centrifugal pumps
- ▶ exterior and interior lighting upgrade to LED



VILLAGE OF ANNAWAN FACILITY

Type of Facility	Lagoon
Potential kWh savings/yr	101,000
Potential cost savings/yr	\$9,600
Current operation cost/yr	\$14,000
Proposed operation cost/yr	\$5,000
Simple payback (in years) with incentives	7.5

### MAIN RECOMMENDATIONS

- ▶ fine bubble aeration with blower controls
- ▶ downsize blowers
- ▶ high efficiency motors

*This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the State Energy Program Award Number DE-EE0008646.*

*To learn more about the Public Water Infrastructure Plant Program, or request an assessment, visit:*  
<https://go.illinois.edu/PWI-plant-program>.



ILLINOIS SUSTAINABLE TECHNOLOGY CENTER  
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